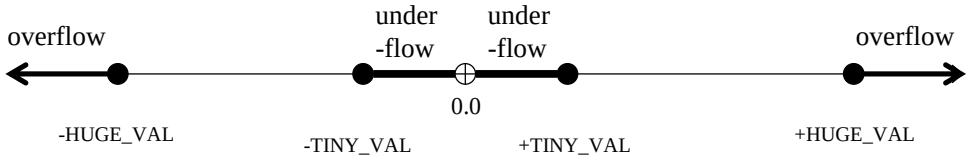
---------- CEN 4072/6070 Software Testing & Verification ----------

Quiz 1 -- Spring 2017 – Solution Notes

1. iii. AFCCV subsumes Strategy #3

2.



3. Different non-error behaviors of pow() were identified using a standard math dictionary based on the different functions x**y represents depending on what region (point, line, etc.) in the x,y plane the input reflects.

4. a. for AFCCV: 2x3x3x2=36 for AEMC: 1 (e.g., T T F T F * *)
   b.

	TEST CASES									
CAUSES	1	2	3	4	5	6	7	8	9	10
(1)	**T**									
(2)	**T**									
(3)	**T**									
(4)	**F**									
(5)	**F**									
(6)	⋆									
(7)	⋆									
EFFECT										
(25)	**T**									

⋆ don't care

5. a. fmod(3.5,2.3) = 3.5-(2.3)(1)=1.2
   fmod(3.5, -2.3) = 3.5-(-2.3)(-1)=1.2
   fmod(-3.5,2.3) = -3.5-(2.3)(-1)=-1.2
   fmod(-3.5, -2.3) = -3.5-(-2.3)(1)=-1.2
   fmod(3.5, 0) = NaN

   b. fmod(-3.5, 2.3): fmod(x,y) returns the value x - y*CEILING(x/y) and errno is not set
   fmod(-3.5, -2.3): fmod(x,y) returns the value x - y*FLOOR(x/y) and errno is not set

   c. merge text files; sequence check text files

   d. i. not valid
   ii. not valid
   iii. valid
   iv. not valid

   e. All *documented examples* in the requirements specification/user manual (in this case, MAN page) should be tested.

6. a. none
   b. statement branch condition
   c. statement branch condition basis paths
   d. 1
   e. 3
   f. infinite

7. Consider test case #1 with inputs A: true, B: false. This case covers path <1,2,3,4>. Now consider test case #2 with inputs: A: false, B: true. It also covers path <1,2,3,4>. Thus, test cases #1 and #2 provide condition coverage (both A and B have been true at least once and false at least once) but not path coverage, since path <1,2,4> is not covered. Finally, consider test case #3 with inputs A: false, B: false. This case covers path <1,2,4>. Therefore, test cases #1 and #3 provide path coverage, but not conditions coverage, since B has not been true. Therefore, path coverage coverage and condition coverage are independent.